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Antiques Roadshow: The Common Law and the Coming Age of Groundwater Marketing

Dean Baxtresser
University of Michigan Law School

NOTE

ANTIQUES ROADSHOW: THE COMMON LAW AND THE COMING AGE OF GROUNDWATER MARKETING

*Dean Baxtresser**

Groundwater law in the United States is ill suited to deal with the issue of groundwater marketing. As freshwater shortages become more common with increasing population and a warming climate, scholars and business people are touting water markets as the solution to conservation and distribution, as well as a source of hefty profits. T. Boone Pickens—the famous oil tycoon of Texas—has turned this concept into reality with his attempt to exploit the groundwater of the Ogallala Aquifer in the Texas Panhandle for thirsty Texas cities. Despite the looming water shortages, however, states have not adapted their laws to deal with the marketing issue. As a result, the legality of groundwater marketing like the Pickens Plan is currently decided by outdated laws that were never meant to deal with groundwater marketing. In general, groundwater marketing is only legal where the law permits off-tract use—an old distinction that bears no relationship to the policy issues that must be raised by state legislatures to seriously address upcoming severe water shortages. This Note examines the various legal doctrines in the United States governing groundwater and determines that, whether for or against water marketing, states should affirmatively address the policy issues presented by the potential of marketing by updating their laws so that they can deal with the new paradigm of high-value groundwater in a thirsty age.

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> "I know what people say—water's a lot like air. Do you charge for air? Course not; you shouldn't charge for water. Well, OK, watch what happens. You won't have any water."
>
> –T. Boone Pickens[1]

INTRODUCTION

T. Boone Pickens, the oil tycoon of Texas, plans to pump groundwater from an aquifer underneath his ranch in the Texas panhandle and sell it to distant, thirsty cities.[2] His plan ("Pickens Plan" or "Plan") has attracted significant media attention and public controversy, both of which emphasize that the Plan is a serious gamble in the struggle for a new resource commodity.[3] The land controlled by Pickens is arid, but underneath it runs the largest groundwater source in the country: the Ogallala Aquifer.[4] Pickens's company, Mesa Water, Inc., ("Mesa") claims it is ready to pump 323,000 acre-feet of water per year via pipeline to "regions that desperately need it."[5] To date, no city has been willing to pay Mesa's price for water, yet Pickens seems unconcerned, predicting a potential profit in groundwater sales of $100 million—ten times the amount he has already invested.[6]

The Pickens Plan represents a concept that has recently taken center stage in water policy discussions: water marketing. As a commodity, water has the potential to be sold as a natural resource for a price much higher than most Americans pay today. Water in the United States is heavily subsi-

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1. Chris Mayer, *A Refreshing Idea*, DAILY WEALTH, Jan. 13, 2007, http://www.dailywealth.com/archive/2007/jan/2007_jan_13.asp.

2. Susan Berfield, *There Will Be Water*, BUS. WK., June 23, 2008, at 40, 40. For purposes of this paper, "groundwater" is defined as any water underneath the surface of the earth. "Aquifers" are "[g]eological formations in which groundwater is stored, and which will yield that water in a usable quantity to a well or spring." JOSEPH L. SAX ET AL., LEGAL CONTROL OF WATER RESOURCES: CASES AND MATERIALS 397 (4th ed. 2006). In regular parlance, the terms are often interchanged with relatively little harm to overall meaning.

3. *See, e.g.*, Berfield, *supra* note 2; Andrew Leckey, *Resourceful Investors Add Water to Portfolio; More Ways to Invest in Supply, Technology*, CHI. TRIB., July 6, 2008, at C6; *Doing Everything All at Once*, N.Y. TIMES, June 22, 2008, at WK2.

4. *See* Berfield, *supra* note 2, at 42.

5. Background Overview of Mesa Water, Inc., http://www.mesawater.com/background.asp (last visited Oct. 11, 2009). One acre-foot is equivalent to the amount of water necessary to cover one acre of land to a depth of one foot.

6. *See* Berfield, *supra* note 2, at 42.

dized, particularly for farmers in the arid West.[7] This subsidization incentivizes the use of large quantities of water, resulting in wasteful practices and economically inefficient uses. These policies hide the real cost of water—a cost that is climbing rapidly due to climate change and population growth, both of which deplete freshwater supplies.

Proponents of water marketing argue that the market itself can regulate supply and demand for water at realistic levels, thereby discouraging waste and increasing conservation.[8] Massive increases in demand in the Western United States have led many scholars to recommend water markets as a solution to the problems of conservation and reallocation.[9] Market solutions have even been proposed for heavily regulated supplies, such as the Colorado River.[10] Climate change has also been a rallying cry for water marketing,[11] since the scientific community predicts drastic decreases in replenishment rates for freshwater basins.[12] Even the historically humid Eastern United States will be affected by changes in precipitation patterns caused by climate change,[13] and some scholars have taken the debate to the Eastern United States as well.[14] The water-marketing concept has, by now, entered the public consciousness. A few proposals have reached the state

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7. *See* Jedidiah Brewer et al., *Transferring Water in the American West: 1987–2005*, 40 U. MICH. J.L. REFORM 1021, 1021–24 (2007); Robert Glennon, *Water Scarcity, Marketing, and Privatization*, 83 TEX. L. REV. 1873, 1884–86 (2005).

8. *See* Glennon, *supra* note 7, at 1886–88; Noah D. Hall et al., *Climate Change and Freshwater Resources*, NAT. RESOURCES & ENV'T, Winter 2008, at 30, 35.

9. *See* Glennon, *supra* note 7, at 1884–88; Hall et al., *supra* note 8, at 35.

10. *See* Robert Glennon & Michael J. Pearce, *Transferring Mainstem Colorado River Water Rights: The Arizona Experience*, 49 ARIZ. L. REV. 235 (2007).

11. *See, e.g.*, Jonathan H. Adler, *Water Marketing as an Adaptive Response to the Threat of Climate Change*, 31 HAMLINE L. REV. 729 (2008).

12. For a detailed description of how climate change will affect freshwater supplies, see INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, IPCC TECHNICAL PAPER VI: CLIMATE CHANGE AND WATER (2008), *available at* http://www.ipcc.ch/pdf/technical-papers/climate-change-water-en.pdf [hereinafter IPCC TECHNICAL PAPER VI]. Generally, the decreased supplies will be caused by changing precipitation patterns, decreased mountain snowmelt because of warmer spring months, and lower recharge rates of groundwater aquifers due to the faster evaporation of rainwater in warmer temperatures. *Id.* at 25–31.

13. *See* IPCC TECHNICAL PAPER VI, *supra* note 12, at 102; *see also* PETER H. GLEICK, U.S. GLOBAL CHANGE RESEARCH PROGRAM, WATER: THE POTENTIAL CONSEQUENCES OF CLIMATE VARIABILITY AND CHANGE FOR THE WATER RESOURCES OF THE UNITED STATES (2000), *available at* http://www.gcrio.org/NationalAssessment/water/water.pdf.

14. *See, e.g.*, Christine A. Klein, *Water Transfers: The Case Against Transbasin Diversions in the Eastern States*, 25 UCLA J. ENVTL. L. & POL'Y 249 (2007) (arguing for a different paradigm for water supplies in the East that emphasizes the limits of local water supply and discourages transbasin diversions).

legislative level,[15] and the idea has even entered the realm of popular culture.[16]

Despite the commentary, debates, and pop-culture references, water marketing has not yet significantly impacted the common law landscape for groundwater allocation in the United States. More bluntly, the common law groundwater doctrines throughout the country are stagnant, even in the face of a potential marketing era. This is a considerable problem, since the groundwater common laws in the United States are out of date and unsuited to deal with the new paradigm of high-value water. Many states place significant reliance on groundwater supplies,[17] yet they still apply old common law doctrines to allocate their groundwater. Most of these doctrines were developed over one hundred years ago and were never intended to deal with water shortages on such massive scales, nor the idea that water could be treated as a finite natural resource. As a result, across the country, the very laws that will determine the fate of groundwater marketing express no preference on the issue of groundwater marketing, and were enacted for different purposes entirely. Under these laws, the legality of marketing often rests upon an antiquated, and now-arbitrary, legal distinction of whether a given doctrine permits off-tract use.[18]

With water shortages looming, whether or not a state allows groundwater marketing should be a policy decision made by a legislature, not by the peculiarities of outdated laws. States should entertain the idea of groundwater markets and express a clear preference on its legality through legislation. Without this direction, state courts will likely have to resolve groundwater-marketing disputes based on doctrines adopted under different value-systems for water, and precedent that is devoid of groundwater policy considerations in this new era of climate change and shortage. Accordingly, this Note suggests that suitable groundwater policy from state legislatures regarding groundwater marketing (regardless of the determination of legality) should involve at least these three factors inherent in water allocation today: (1) efficient use, (2) balancing the utility of different uses such as development, and (3) the expression of clear water policy regarding groundwater marketing on which people can rely without resorting to

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15. *See, e.g.*, Santos Gomez & Penn Loh, *Communities and Water Markets: A Review of the Model Water Transfer Act*, 14 HASTINGS W.-NW. J. ENVTL. L. & POL'Y 689, 700–02 (2008) (discussing the proposed Model Water Transfer Act in California).

16. *See, e.g.*, QUANTUM OF SOLACE (Metro-Goldwyn-Mayer 2008) (pitting James Bond against a villain whose master plan is to take ownership of all of Bolivia's freshwater resources—presumably because of the high value of the water).

17. Roughly 20 percent of all water used in the United States comes from groundwater. SUSAN S. HUTSON ET AL., U.S. DEP'T OF THE INTERIOR, U.S. GEOLOGICAL SURVEY CIRCULAR 1268: ESTIMATED USE OF WATER IN THE UNITED STATES IN 2000, at 39 (2004), *available at* http://pubs.usgs.gov/circ/2004/circ1268/pdf/circular1268.pdf. About 40 percent of water used for domestic purposes comes from groundwater. *Id.*

18. "Off-tract use" is defined as the use of groundwater on land not directly above the aquifer from which the water originates.

excessive judicial interpretations.[19] None of the doctrines, as they stand today, meet these three factors.

Therefore, this Note argues that groundwater laws in the United States are inadequate to deal with groundwater marketing. As a case study, the Note applies the country's different common law doctrines to the Pickens Plan to explain the current legality of groundwater marketing. Part I summarizes the common law regimes that form the bedrock of groundwater law and assesses the feasibility of the Pickens Plan under each doctrine. It concludes that the groundwater doctrines in the United States are not suited to deal with marketing. Part II then argues that the Dormant Commerce Clause and the public trust doctrine do not alleviate the need for a change in the common law doctrines that address groundwater marketing. The Note concludes that state governments should proactively address the marketing issue, as their laws inadequately deal with the potential for groundwater marketing.

I. GROUNDWATER MARKETS AND THE COMMON LAW DOCTRINES

Because water allocation is governed at the state level, the United States hosts as many water doctrines and legislative schemes as there are jurisdictions. Vast regional differences in freshwater supplies contribute to the differences in the law, as well as the fact that water allocation is instrumentalist law[20]—practical law that is outcome driven.[21] Instrumentalism has allowed courts and states to maintain doctrines for as long as they are useful and simply change the doctrines when the laws cease to provide the outcome appropriate for the jurisdiction.[22] Because states can have different concepts of equitable distribution of water, the law can vary significantly from one jurisdiction to another.

Nowhere in water-allocation law is the variety more pronounced than with groundwater. Hugely different doctrines developed in the United States because of differences in the supply and need for groundwater. Changing scientific understandings also led to various approaches to groundwater allocation. Luckily, however, some states developed similar enough regimes

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19. This Note is not the appropriate platform to discuss the individual merits of these factors for groundwater policy. Rather, they are simply used as a tool to ascertain the suitability of groundwater law when dealing with the issue of marketing. The first factor of efficiency comes logically from the water shortage problem due to population growth and climate change. The second factor of utility is a nod to the reasonableness factors present in Section 850A of the Second Restatement of Torts. The third factor derives from situations where the legislature provides such vague policy that the marketing decision is left to the courts—a problematic situation that will be further explored later in this Note.

20. Robert H. Abrams, *Charting the Course of Riparianism: An Instrumentalist Theory of Change*, 35 WAYNE L. REV. 1381, 1388–90 (1989).

21. For a detailed account of instrumentalism and its applicability to natural resources, see ROBERT SAMUEL SUMMERS, INSTRUMENTALISM AND AMERICAN LEGAL THEORY (1982).

22. A major example of change in water law doctrine to meet the needs of people is the abandonment of riparianism in the Western United States. *See* Abrams, *supra* note 20, at 1389.

so that they can be grouped together for a broad analysis. At present, five categories of groundwater common law doctrines govern different states across the nation: (1) the doctrine of capture; (2) the "American" reasonable-use doctrine; (3) the correlative rights doctrine; (4) the doctrine of prior appropriation; and (5) the Second Restatement of Torts' doctrine of reasonable use.[23] These categories are generalizations that ignore smaller differences in the laws of different states applying the same doctrine. They are helpful for broad analysis, but should not be interpreted as suggesting that courts of different states necessarily apply the doctrines in exactly the same way.

Using the Pickens Plan as a case study,[24] this Part assesses the legality of groundwater marketing under each of the common law groundwater doctrines.[25] The history and applicability of the groundwater doctrines indicate that they are unsuitable for the issue of marketing. As will be shown, the major theme for marketing under the doctrines is the permissibility of off-tract use. Though it is arbitrary and dated, the factor is dispositive of the legality of marketing, since a groundwater market could not exist without off-tract use. This is most certainly the case with the Pickens Plan, where groundwater will be transported hundreds of miles through the desert to thirsty cities lacking access to the Ogallala Aquifer.

A. *The Doctrine of Capture*

Predating groundwater marketing by more than a century, the doctrine of capture is the oldest groundwater doctrine in America. It originates from the English rule articulated in *Acton v. Blundell*, where the owner of a coal-

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23. SAX ET AL., *supra* note 2, at 415–17. Scholars interpret the number and types of groundwater categories differently, which only serves to emphasize the difficulty of making generalizations about groundwater law. *See* Dana M. Saeger, Comment, *The Great Lakes-St. Lawrence River Basin Water Resources Compact: Groundwater, Fifth Amendment Takings, and the Public Trust Doctrine*, 12 GREAT PLAINS NAT. RESOURCES J. 114, 126 n.113 (2007).

24. It is important to note that the common law doctrines technically only determine private rights of action, not the actual legality of groundwater withdrawals. Often, however, statutory provisions and state regulations mirror common law prohibitions. *See, e.g.*, N.M. STAT. ANN. § 72.1.1 (2008) (codifying the doctrine of prior appropriation in New Mexico); OHIO REV. CODE § 1521.17 (2008) (mirroring the requirements for reasonable use of water in the Second Restatement of Torts). Furthermore, in the case of the Pickens Plan, injury to other water users can be assumed because of the Plan's need for sizeable groundwater withdrawals in areas where water is highly valued.

25. The Pickens Plan is certainly not the only water-marketing venture in the world, but it is currently the most prominent in the United States—making it ripe for analysis in this Note. Currently, a limited form of water markets exists in California, *see Water trading takes off in Golden State*, GREENWIRE, April 4, 2002, and Australia has operated a strong water-commodity program for some time, *see* Rob Taylor, *Australian Farms Make More Money Selling Water Than Growing Grain*, BUS. REP., Sept. 2, 2008, http://www.busrep.co.za/index.php?fSectionId=565&fArticleId=4588994. Additionally, there are serious calls for water marketing in the developing world, *see* Tyler Cowen, *Water: Pay For It*, FORBES, June 19, 2008, *available at* http://www.forbes.com/2008/06/19/deregulate-water-thirdworld-tech-water08-cx_tc_0619monopoly_print.html, as well as calls for water marketing in the developed world, *see* MARCEL BOYER, MONTREAL ECON. INST., FRESHWATER EXPORTS FOR THE DEVELOPMENT OF QUEBEC'S BLUE GOLD (2008), *available at* http://www.iedm.org/main/show_publications_en.php?publications_id=226.

mine was sued for draining the wells on an adjacent parcel of land.[26] The English court assigned no liability to the mine owner, which perhaps best describes the doctrine itself—it is a doctrine of zero liability. An owner of land cannot be held liable for injury caused by withdrawals of groundwater from a well or spring on the owner's land, regardless of the type or magnitude of the injury.[27] The doctrine asserts that there are no rights to groundwater until it is removed from the ground, and therefore there is not a right to future water, nor even a right to subjacent support from groundwater to prevent land subsidence.[28] Hydrogeologically, groundwater from one well certainly moves to another when both wells are above the same aquifer, but under the doctrine of capture, this does not matter.[29] Courts only attach liability in the limited circumstances of malicious withdrawals or pollution.[30] Short of these exceptions, however, a landowner can do anything with the groundwater once it is "captured"—including transfer the water off tract.

Many states have abandoned the doctrine of capture due to greater scientific understanding of groundwater and the inefficient use that the rule encourages,[31] yet somewhat surprisingly, several states still maintain the doctrine.[32] Texas and Maine adhere to the doctrine, their courts having reaffirmed its applicability as recently as 1999.[33] Other states, such as Connecticut, may also retain the rule of capture because of a dearth of intervening case law stating otherwise.[34] Even Colorado, a western state notable

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26. 152 Eng. Rep. 1223, 1223–24 (Ex. Ch. 1843).

27. Kimberly Till Lisenby, *Rights to Groundwater in Alabama and the Reasonable Use Doctrine: An Assessment of* Martin v. City of Linden, 48 ALA. L. REV. 1045, 1051 (1997). Spite pumping is the lone exception to this rule. *Id.*

28. The most common form of injury resulting from groundwater withdrawals is the lowering of the water table of the aquifer. In rarer cases, the aquifer may be depleted. In extreme cases, land subsidence due to lower water pressure can occur. The rule of capture offers no liability for any of these damages. *See, e.g.*, Friendswood Dev. Co. v. Smith-Southwest Indus., 576 S.W.2d 21, 28–29 (Tex. 1978).

29. In fact, only one groundwater doctrine distinguishes groundwater movements—prior appropriation. It does so poorly, and is a good lesson on why it is so difficult to apply groundwater movement to the groundwater doctrines. For more on the hydrogeology of groundwater, see SAX ET AL., *supra* note 2, at 397–411.

30. Joseph W. Dellapenna, *The Law of Water Allocation in the Southeastern States at the Opening of the Twenty-First Century*, 25 U. ARK. LITTLE ROCK L. REV. 9, 41–42 (2002). Given the difficulty in proving malice or pollution, the exceptions are rarely applied. *See* Alex W. Horton, Comment, *Where'd All the (Ground) Water Go? Three Approaches to Balancing Resource Efficiency with Rural Sustainability in Texas*, 49 S. TEX. L. REV. 691, 698 (2008).

31. *See* Dellapenna, *supra* note 30, at 41–45.

32. SAX ET AL., *supra* note 2, at 417. For an illuminating listing of the common law doctrines by states, see MATTHEW CHAPMAN ET AL., U.S. DEP'T OF AGRIC., U.S.D.A. FOREST SERVICE SOURCEBOOK OF STATE GROUNDWATER LAWS IN 2005 (2005), *available at* http://www.fs.fed.us/biology/resources/pubs/watershed/groundwater/state_gw_laws_2005.pdf. The accuracy of this source is questionable, but as a general matter, it is an interesting compilation that shows where the groundwater doctrines are generally applied in the United States.

33. For Texas's affirmation, see *Sipriano v. Great Spring Waters of America, Inc.*, 1 S.W.3d 75 (Tex. 1999). For Maine's affirmation, see *Maddocks v. Giles*, 728 A.2d 150 (Me. 1999).

34. *See Maddocks*, 728 A.2d at 153 (listing cases that support the proposition that several states continue to adhere to the rule of capture); Kirt Mayland, *Navigating the Murky Waters of*

for being quick to replace the doctrine, has a statutory provision that indicates certain types of groundwater may still be governed by the doctrine of capture.[35]

The doctrine of capture is unsuited to deal with groundwater marketing, although the Pickens Plan would be legal under such a regime. Interestingly, the Plan is actually being implemented in Texas, a long-time adherent to the doctrine. Because there is zero liability for water withdrawals, no one injured by the Pickens Plan would have standing to file suit. The Plan implicates none of the few exceptions to the zero liability of the rule: the act of withdrawing water for sale does not by itself add pollutants to the groundwater, nor is its sole purpose the injury of another (a necessary component for malicious withdrawals). Yet the origin of the doctrine in the nineteenth century[36] indicates that no state could have possibly considered groundwater marketing before the adoption of the doctrine. Furthermore, the doctrine discourages efficient use, and also does not examine the utility of different uses for groundwater. This has the effect of discouraging development because the doctrine would not protect a groundwater marketer's investment in a certain aquifer, should another user decide to deplete the aquifer. The lack of protections for any kind of use, the encouragement of wasteful practices, and the lack of any kind of policy considerations over marketing at the time of the doctrine's creation indicate that the doctrine of capture is ill suited to groundwater marketing, and should be "consigned to the dustbin of history."[37]

B. *The Doctrine of American Reasonable Use*

Many states that have abandoned the doctrine of capture have adopted the doctrine of American reasonable use,[38] but this doctrine is hardly an improvement for addressing the issue of groundwater marketing. The doctrine is similar to the rule of capture in every respect but one: American reasonable use prohibits off-tract use.[39] Interestingly, scholars and courts add a requirement of "reasonableness" to the doctrine,[40] but this "reasonableness"

Connecticut's Water Allocation Scheme, 24 QUINNIPIAC L. REV. 685, 708 (2006) (arguing that Connecticut still applies the rule of capture for certain uses of groundwater based on precedent from 1850 that has never been overturned).

35. COLO. REV. STAT. § 37-90-102 (2008) ("The doctrine of prior appropriation shall not apply to nontributary ground water . . . . Such water shall be allocated as provided in this article upon the basis of ownership of the overlying land.").

36. *See* Acton v. Blundell, 152 Eng. Rep. 1223 (Ex. Ch. 1843).

37. *See* SAX ET AL., *supra* note 2, at 417.

38. *Maddocks*, 728 A.2d at 153; Dellapenna, *supra* note 30, at 44. Notably, several states in the Southeastern United States use the doctrine of American reasonable use. *See, e.g.*, Martin v. City of Linden, 667 So. 2d 732 (Ala. 1995); Village of Tequesta v. Jupiter Inlet Corp., 371 So. 2d 663, 666 (Fla. 1979).

39. For an excellent judicial application of the doctrine of American reasonable use, see *Martin*, 667 So. 2d 732, which held that groundwater may not be conveyed off the land—even to benefit a municipality.

40. *See, e.g.*, SAX ET AL., *supra* note 2, at 415.

factor does no work in any legal analysis. For courts, the on-tract use requirement functions as a proxy for reasonableness, while off-tract use is always unreasonable.[41] Taking this into account, there is nothing reasonable about the doctrine of American reasonable use at all. An on-tract use, however ridiculous and wasteful, will still meet the reasonableness requirement by the standards that courts have used. Furthermore, the doctrine was adopted by most states long before the rise of groundwater markets, and due to its similarity to the doctrine of capture, suffers from the same problems when applied to groundwater.

Though the Pickens Plan would not be legal in a jurisdiction applying the doctrine of American reasonable use, the doctrine is still not suitable to deal with groundwater marketing. The Plan necessarily requires off-tract use for groundwater—something American reasonable use bars in no uncertain terms. Yet, like its predecessor, the doctrine of capture, American reasonable use does not consider the type of use to which the groundwater is put. Even if the Pickens Plan were supplying a city with drinking water, a court would likely prohibit it if applying the doctrine of American reasonable use. Public municipalities do not even receive an exception under American reasonable use, and would share the same fate as the Pickens Plan—failure.[42] This result shows the arbitrariness of the on-tract use requirement in American reasonable use: it is an absolute bar that places no weight on beneficial uses, discourages development, and encourages inefficient practices with on-tract use. Regardless of whether a state is for or against groundwater marketing, the doctrine of American reasonable use was never intended to deal with water shortages necessitating the issue of marketing, and is now unsuited to deal with the issue in its entirety.

C. *The Doctrine of Correlative Rights*

As an alternative to the doctrine of American reasonable use, some states adopted the doctrine of correlative rights[43]—arguably a more equitable

41. *Martin*, 667 So. 2d at 738 ("A waste of water or a wasteful use of water was unreasonable only if it caused harm, and any nonwasteful use of water that caused harm was nevertheless reasonable if it was made on or in connection with the overlying land. . . ." (quoting Henderson v. Wade Sand & Gravel Co., 388 So. 2d 900, 902 (Ala. 1980))); *see also* A. Dan Tarlock, *Supplemental Groundwater Irrigation Law: From Capture to Sharing*, 73 KY. L.J. 695, 703 (1985) (pointing out that all off-tract use is per se unreasonable under the doctrine of American reasonable use). However, courts have sometimes used their equitable powers to overcome the on-tract requirement. L. William Staudenmaier, *Between a Rock and a Dry Place: The Rural Water Supply Challenge for Arizona*, 49 ARIZ. L. REV. 321, 326 (2007).

42. *See Martin*, 667 So. 2d 732 (giving a municipality no special treatment in applying the doctrine of American reasonable use).

43. The California Supreme Court created the correlative rights doctrine in 1903, and the state was, therefore, the first state to adopt the doctrine. Katz v. Walkinshaw, 74 P. 766 (Cal. 1903) (articulating the correlative rights doctrine). Several other states also adopted the correlative rights doctrine. *See, e.g.*, State v. Ponten, 463 P.2d 150, 153 (Wash. 1969) (reaffirming the doctrine of correlative rights in Washington); Wrathall v. Johnson, 40 P.2d 755 (Utah 1935) (adopting the doctrine of correlative rights in Utah); Higday v. Nickolaus, 469 S.W.2d 859 (Mo. Ct. App. 1971) (distinguishing California's use of the correlative rights doctrine, yet applying a similar doctrine in Missouri).

doctrine, yet still unsuitable for the marketing issues that states will face. Described as "riparianism on its side,"[44] the doctrine requires that groundwater be shared equitably among all overlying landowners,[45] which essentially means that during a shortage, on-tract users may use an amount of water proportional to the amount of land they own that overlies the underlying aquifer.[46] General scholarship and courts report that unlike American reasonable use, this doctrine permits off-tract use.[47] But this is a mischaracterization. Off-tract use is only allowed if the annual recharge of the aquifer exceeds current withdrawals.[48] And since a surplus of water will always preclude the possibility of a conflict over the resource, this exception exists for any of the groundwater doctrines.[49] Like doctrines that prohibit off-tract use, though, in the event of a water shortage in a correlative rights jurisdiction, off-tract uses become subservient to on-tract uses—meaning they are essentially prohibited.[50]

Like the prior doctrines, the correlative rights doctrine is not suited to deal with groundwater markets. The doctrine effectively prohibits the Pickens Plan, though not because of a policy decision about groundwater marketing. Rather, it is merely because the doctrine of correlative rights effectively prohibits off-tract use. Arguably, the doctrine does not prohibit off-tract use as completely as American reasonable use. However, the Pickens Plan could only be successful in a shortage situation. The amount of water necessary for the Pickens Plan would undoubtedly exceed an aquifer's available surplus—thereby creating a shortage—especially in areas where the water would be worth enough to make the Plan economically feasible. Given the unlikelihood and irrelevance of a surplus under correlative rights, the Pickens Plan cannot succeed under this doctrine because of the practical prohibition on off-tract use. This result shows the arbitrariness of the on-tract use requirement. Like the doctrine of American reasonable use, the ban places no weight on beneficial uses, thereby discouraging development, and also encouraging inefficient practices with on-tract use. The correlative rights doctrine was designed long ago in a time where groundwater market-

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44. SAX ET AL., *supra* note 2, at 416. Riparianism is one of two common law doctrines governing surface water in the United States (the other being prior appropriation). The doctrine essentially grants water use rights to owners of land adjacent to water. Riparians are entitled to reasonable use of the adjacent water, however, there are often limitations on how much they can use so that they do not unreasonably interfere with the riparian rights of others. *See id.* at 27–37.

45. *Id.*

46. 93 C.J.S. *Waters* § 204 (2009); Ronald Kaiser & Frank F. Skillern, *Deep Trouble: Options for Managing the Hidden Threat of Aquifer Depletion in Texas*, 32 TEX. TECH L. REV. 249, 267 (2001).

47. Kaiser & Skillern, *supra* note 46, at 267.

48. *See id.*

49. Regardless of the regime, so long as there is always enough water, no one will litigate the issue of water shortage. Therefore, from a practical standpoint, it does not matter if there is an off-tract prohibition.

50. For a modern judicial application of this dilemma, see *In re Wai'ola O Moloka'i, Inc.*, 83 P.3d 664, 711 (Haw. 2004) (adopting the correlative rights doctrine for all groundwater in Hawaii, and, therefore, finding off-tract use to be subservient to on-tract use).

ing was not contemplated, and the doctrine fails to deal with any of the policy issues of groundwater marketing.

D. *The Doctrine of Prior Appropriation*

Among all the common law doctrines, the doctrine of prior appropriation is uniquely unsuitable for all groundwater allocation issues, not only marketing. It is the only groundwater doctrine to have its origin in a surface-water allocation scheme. Prior appropriation is the main common law doctrine governing surface water in the Western United States, and some western states also apply it, with difficulty, to groundwater.[51] The groundwater system essentially mimics the surface-water doctrine, in that rights to groundwater are "[1] obtained by putting the water to a beneficial use; [2] have a specified point of diversion and are quantified as to amount; [3] can be lost for non-use; and [4] can be transferred so long as no harm is suffered by other water rights holders."[52] In the event of conflict between two or more users, temporal priority is the determining factor in water allocation.[53] This priority system differs from a correlative rights allocation, which hinges on the amount of property overlying the basin.

Applying prior appropriation—a surface-water doctrine—to groundwater presents serious problems that show the doctrine's lack of applicability to dealing with marketing issues, as well as its unsuitability for the Pickens Plan. The doctrine presents two fundamental problems when applied to groundwater. First, shallow well depth may cause a senior appropriator to lose the ability to extract water even though there is water available to extract. A solution in this case is for the junior withdrawer to compensate the senior for increasing the well depth—or transferring water from the junior's own well. However, tracing liability underground is problematic, especially in conflicts involving a large number of water withdrawers and a sizeable underlying aquifer.[54] This difficulty is compounded by the second problem—the slow moving nature of groundwater. Well shortages can take place after a significant amount of time has passed since the junior began extracting water. Because years may pass before injury is suffered, determining causality can be an administrative nightmare.[55]

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51. *See* SAX ET AL., *supra* note 2, at 439. Examples of states in the Western United States that have adopted the doctrine of prior appropriation include Idaho, North Dakota, and New Mexico. *See* Am. Falls Reservoir Dist. No. 2 v. Idaho Dep't of Water Res., 154 P.3d 433 (Idaho 2007); Volkmann v. City of Crosby, 120 N.W.2d 18 (N.D. 1963); State *ex rel.* Bliss v. Dority, 225 P.2d 1007 (N.M. 1950).

52. SAX ET AL., *supra* note 2, at 439; *see also* A. Dan Tarlock, *Prior Appropriation: Rule, Principle, or Rhetoric?*, 76 N.D. L. REV. 881, 882 (2000).

53. *See* SAX ET AL., *supra* note 2, at 439.

54. *See id.*

55. *See* Tarlock, *supra* note 52, at 900; Matthew S. Tisdale, Note, *The Price of Thirst: The Trend Towards the Privatization of Water and its Effect on Private Water Rights*, 37 SUFFOLK U. L. REV. 535, 541 (2004).

Though the Pickens Plan would not fail under the doctrine of prior appropriation because of an off-tract use prohibition (there is no such prohibition under the doctrine),[56] the Plan would likely not succeed because of the problems with the doctrine and the difficulty of acquiring temporal rights to groundwater. Under any prior appropriation scheme, temporal rights to groundwater are difficult to acquire, as most of these rights have been appropriated since the nineteenth century.[57] Since the Pickens Plan requires rights to groundwater, they would have to be purchased, and the price for such rights would be exceedingly high in areas where the Pickens Plan would be most profitable. Legal challenges would also be costly, as the doctrine of prior appropriation engenders lawsuits. Altering the use of a preexisting appropriation usually requires government approval, and the massive withdrawals necessary for the Pickens Plan could injure other users. Furthermore, there is always the danger of purchasing rights that already have liability attached. Finally, the well-documented problems of the doctrine as applied to groundwater raise the concern that a court may simply find prior appropriation unworkable with the Pickens Plan, and change the law rather than deal with the difficulties.[58] Significant investment could be lost because of the failings of the doctrine and the instrumental nature of water law.

The likely failure of the Pickens Plan under the doctrine of prior appropriation highlights the doctrine's unsuitability for dealing with marketing. Obviously, a doctrine with such fundamental problems when generally applied to groundwater could not be well suited for the issue of groundwater marketing. Beyond that, however, the inadvertent administrative nightmare that would undoubtedly result in prohibitive transaction costs for groundwater marketing provides a disincentive to market that was never approved by any legislature. Even if a legislature wanted to discourage marketing, this is certainly an odd way to do it. Prior appropriation was first adopted as a tool to encourage development,[59] but it now, ironically, frustrates this goal by encouraging inefficient use. Therefore, the history and current effect of the doctrine indicate that prior appropriation is completely unsuitable to deal with groundwater marketing.

E. *The Second Restatement of Torts' Doctrine of Reasonable Use*

The Second Restatement of Torts' doctrine of reasonable use ("Restatement") is the most modern of all the groundwater doctrines, but it too is ill

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56. Off-tract use in jurisdictions using the doctrine of prior appropriation is actually quite prevalent. *See* A. Dan Tarlock, *Putting Rivers Back in the Landscape: The Revival of Watershed Management in the United States*, 14 HASTINGS W.-NW. J. ENVTL. L. & POL'Y 1059, 1072–73 (2008) (providing examples of watershed diversions).

57. *See* SAX ET AL., *supra* note 2, at 439–42.

58. *See id.*; *see also* Tarlock, *supra* note 55 (arguing that the doctrine of prior appropriation hurts nonrenewable resources, such as groundwater aquifers).

59. Sandra B. Zellmer & Jessica Harder, *Unbundling Property in Water*, 59 ALA. L. REV. 679, 696 (2008).

suited to deal with the issue of marketing. Under the doctrine, water withdrawals attach zero liability in the event of damage, provided the water is used for a beneficial purpose.[60] The doctrine substantially departs from other zero liability schemes—like the doctrines of capture and American reasonable use—because of three exceptions to its general liability rule. A withdrawer may not unreasonably cause harm by lowering the water table or lessening artesian pressure,[61] exceed a reasonable share of the annual supply, or cause harm to someone with rights to affected surface water.[62]

Notably, the Restatement makes no distinction between on- and off-tract use—thereby tacitly permitting off-tract use, such as that of the Pickens Plan. The Restatement also specifically departs from the interpretation of what is "reasonable" under the doctrine of American reasonable use. Rather than being subsumed by an on–off-tract distinction,[63] "reasonable use" has a working definition under the Restatement that requires courts to substantively evaluate the reasonableness of particular uses. To aid in the determination of reasonable use, the Restatement simply applies the reasonable-use factors from its section on surface water.[64] These factors include: the purpose of the use; the suitability of the use; the economic value of the use; the social value of the use; the extent and amount of the harm the use causes; the practicality of avoiding the harm; the practicality of adjusting the amount of water used; the protection of existing values of water uses; and the justice of requiring the user causing harm to bear the loss.[65] Given the large number of factors, as well as the broad language of each, courts have acknowledged they have great latitude in adjudicating water disputes.[66] The factors in the Restatement help to guide courts, but their breadth allows courts to exercise broad discretion in deciding groundwater allocation disputes.

Whether the Pickens Plan would be legal in a jurisdiction applying the Restatement largely depends on a court's interpretation of the doctrine. Like the rule of capture and prior appropriation, the Restatement does not prohibit off-tract use of groundwater. But the major hurdle facing the Pickens

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60. RESTATEMENT (SECOND) OF TORTS § 858 (1979). Nebraska, Wisconsin, and Ohio have all adopted some form of the Restatement doctrine. *See* Spear T Ranch, Inc. v. Knaub, 691 N.W.2d 116, 132 (Neb. 2005); Cline v. Am. Aggregates Corp., 474 N.E.2d 324, 327 (Ohio 1984); State v. Michels Pipeline Constr., Inc., 217 N.W.2d 339, 350 (Wis. 1974) (adopting the proposed rule for the Second Restatement).

61. Artesian aquifers are under pressure that forces groundwater to the surface when an opening is made in the aquifer, such as a well. That pressure is known as "artesian pressure." For more information, see U.S. Geologic Survey Website, Water Science for Schools (last visited Oct. 6, 2009), http://ga.water.usgs.gov/edu/gwartesian.html.

62. RESTATEMENT (SECOND) OF TORTS § 858.

63. *See supra* Section I.B (regarding the American reasonable-use doctrine).

64. RESTATEMENT (SECOND) OF TORTS § 858 cmt. d.

65. *Id.* § 850A.

66. *See, e.g.*, Spear T Ranch, Inc. v. Knaub, 691 N.W.2d 116, 132 (Neb. 2005) ("[W]hen applying the Restatement, the fact finder has flexibility to consider many factors such as those listed in § 850A, along with other factors that could affect a determination of reasonable use.").

Plan under the Restatement would be the requirement that the use be reasonable. This requirement is much more fluid and malleable than a strict off-tract prohibition. The factors listed in the Restatement provide many grounds for debate, but the feasibility of the Pickens Plan would likely hinge on whether the water source would be harmed, whether a solution could be reached between parties, and whether the use by the Plan would be of greater value than other uses.

The problem with applying this doctrine to groundwater marketing is the wide latitude courts have to decide allocation issues. The number of factors courts can consider allows them to pick and choose—essentially granting them the ability to rule either way on the issue of groundwater marketing depending on what factors they choose to emphasize. A court could argue that marketing (for municipal supply) outweighs rural use (namely, agricultural uses like irrigation), taking into account the number of people benefiting from the groundwater, the development potential, and the economic value of the water provided by something like the Pickens Plan. But a court could just as easily argue that the harm caused to the rural uses would be too great, considering that a municipality could get its water from somewhere else, could conserve more, and could more easily deal with the damage of less water. Under a doctrine like this, there is clearly a lack of policy direction from a state legislature on groundwater marketing, thereby indicating its unsuitability to the water marketing debate.

Furthermore, the doctrine places the determination of the legality of groundwater marketing squarely within the realm of the courts, not the legislature. This is an untenable situation, given the significant policy and political considerations at stake in the debate over the marketing of groundwater. Though the Restatement meets the first two policy factors that indicate suitability for dealing with groundwater marketing, the doctrine remains just as unsuitable for dealing with the issue of marketing because courts have wide latitude to resolve the question due to the lack of clear policy guidance from the legislature.

F. *Doctrinal Solutions*

The application of the five groundwater common law doctrines to the Pickens Plan illustrates how the doctrines are unsuitable for dealing with the issue of groundwater marketing. States are, however, not limited to the five common law doctrines outlined above. They could, perhaps, alter the doctrines to provide more guidance for groundwater-marketing issues. Michigan's recent approach to groundwater disputes provides a good example of a hybrid system that the court used to approach one groundwater-marketing issue—bottled water.[67]

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67. Bottled water has been a catalyst for water disputes in many local regions throughout the country. For an overview of the bottled water issue and its legal effects, see Noah D. Hall, *Protecting Freshwater Resources in the Era of Global Water Markets: Lessons Learned from Bottled Water*, 13 U. DENV. WATER L. REV. (forthcoming 2010), *available at* http://ssrn.com/abstract=1473844.

In *Michigan Citizens for Water Conservation v. Nestlé Waters North America, Inc.*,[68] the Michigan Court of Appeals adopted a hybrid approach between the Restatement and the correlative rights doctrines. Essentially, the court added an on-tract use factor to the other factors present in the Restatement, and gave the factor preferential consideration. In Michigan, then, off-tract use of groundwater must be well justified by the factors in the Restatement, because such use is normally discouraged. This approach provides more guidance for marketing, since on-tract use is specifically preferred, even in a marketing situation (such as the situation with *Nestlé*).

But even this approach has its problems. The broad, sweeping factors of the Restatement still provide latitude for courts to decide issues however they want. Though the Michigan court specified that on-tract use was to be heavily favored in an analysis, it did not specify how that favorability was to be applied. Thus, the uncertainty that renders the Restatement approach unsuitable for groundwater regulation renders Michigan's doctrine equally unsuitable to deal with groundwater marketing. More problematically, the hybrid doctrine represents a judicial approach to the important issue of groundwater marketing—a decision that the legislature should be making instead, given the important policy implications of groundwater marketing. In this respect, all judicial modifications of the common law doctrines in order to deal with groundwater marketing will be essentially legislating from the bench. For the issue of groundwater marketing, this is unfortunate, even if groundwater allocation law is instrumentalist in nature. Regardless, Michigan's modified doctrine provides guidance for how to judicially approach the legal issues presented by groundwater marketing.

II. No Way Around the Doctrines

Scholarship on both sides of the groundwater-marketing debate intimates that other established laws address the issue of marketing, thereby making it unnecessary for states to affirmatively address the problems with their common law doctrines. Some commentators hail the Dormant Commerce Clause as evidence of the legality of water marketing, or at least as a dangerous slope that states will have to navigate, should they legalize groundwater markets within their borders. Meanwhile antimarket commentators perpetually cite the public trust doctrine as a legal reason why marketing cannot be permitted. In reality, however, these issues do not advance the groundwater-marketing debate at all. The federal government could regulate groundwater, but it does not. It rarely involves itself in water marketing. On the other side, the public trust doctrine does not apply to groundwater. This Part details why these issues have little impact on groundwater markets and the common law doctrines. The fact that these issues do nothing for the groundwater-marketing debate serves to emphasize that states must address the possibility of groundwater markets through their

68. 709 N.W.2d 174 (Mich. Ct. App. 2005), *modified*, 737 N.W.2d 447 (Mich. 2007).

own groundwater laws. They will not be able to rely on other laws to do so for them.

A. *The Dormant Commerce Clause*

Some commentators point to Dormant Commerce Clause jurisprudence as a way to circumvent the restrictions (or permissions) of the common law doctrines for groundwater markets; however, the influence of the Clause is far overstated.[69] The Dormant Commerce Clause stands for the principle that "state and local laws are unconstitutional if they place an undue burden on interstate commerce."[70] The Supreme Court's modern application of the Dormant Commerce Clause indicates that state laws discriminating against outsiders will be struck down, and those that do not discriminate will be upheld, provided they do not place a burden on interstate commerce that outweighs the benefit of the law.[71]

The defining intersection of groundwater and Dormant Commerce Clause jurisprudence occurred at the Supreme Court in *Sporhase v. Nebraska ex rel. Douglas*.[72] In the case, the Court emphasized that federal law does not regulate groundwater allocation by noting Congress's deference to state law in thirty-seven statutes, as well as the interstate water compacts Congress approves.[73] The *Sporhase* Court determined that groundwater is an article of commerce, and the Court indicated that Congress would be permitted to regulate groundwater if it chose to do so.[74] The Court noted that the states are not absolved from complying with the Constitution, regardless of the deference of Congress.[75] To put this ruling in the broader rules of the Dormant Commerce Clause, Nebraska essentially violated the Constitution by banning interstate water sales where they would have been permitted intrastate. This should not be construed, however, to mean that the Clause has any effect over the legality of groundwater marketing; that power remains in the hands of the states.

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69. As a whole, federal law rarely interferes with groundwater allocation at the state level, meaning the federal government has little influence over groundwater marketing. *See* Marshall Lawson, *Transboundary Groundwater Pollution: The Impact of Evolving Groundwater Use Laws On Salt Water Intrusion of the Floridian Aquifer Along the South Carolina/Georgia Border*, 9 S.C. ENVTL. L.J. 85, 90 (2000) (noting that Congress has left the area of groundwater allocation to the states); Jack Tuholske, *Trusting the Public Trust: Application of the Public Trust Doctrine to Groundwater Resources*, 9 VT. J. ENVTL. L. 189, 228 (2008). In fact, most courts have ruled that the Clean Water Act does not apply to groundwater—thereby indicating that to be an area for state law, as well. *Id.* at 228 n.269.

70. ERWIN CHEMERINSKY, CONSTITUTIONAL LAW: PRINCIPLES AND POLICIES 419 (3d ed. 2006).

71. *See* United Haulers Ass'n v. Oneida-Herkimer Solid Waste Mgmt. Auth., 550 U.S. 330, 338–39 (2007); CHEMERINSKY, *supra* note 70, at 430.

72. 458 U.S. 941 (1982).

73. *Sporhase*, 458 U.S. at 959–60.

74. *Id.* at 953–54.

75. *Id.* at 959–60.

Yet it is precisely this distinction that often confuses commentators, and as a result, the commentary on *Sporhase* often exceeds the Court's actual decision. Commentators have indicated that the Dormant Commerce Clause prevents states from regulating groundwater exportation for marketing or otherwise.[76] This is incorrect. The recognition of groundwater as an article of commerce only means that the Court would likely not prevent groundwater markets. The decision does little to explain whether Congress would support or condemn such an idea.[77] More importantly, however, while striking down Nebraska's ban on interstate groundwater export, the Court provided an exception to the Dormant Commerce Clause in "times of severe shortage,"[78] and most states have taken advantage of this language.[79] While it remains an open question whether state statutes and local regulations banning interstate water export would withstand Dormant Commerce Clause scrutiny, their mere presence currently chills the likelihood of interstate marketing, since any attempt to do so would turn on an outcome at court.[80] The economic risk involved in such an undertaking might prove too extreme for groundwater markets to attempt interstate water marketing where state law prohibits such export—even if the law were unconstitutional. Indeed, it is the Court's ambiguity in *Sporhase* that underlines the effect and influence federal law has on the legality of groundwater marketing: intrastate—zero impact; and interstate—little impact. As a result, states will find that federal law, in its current form, will not deal with groundwater marketing for them. Congress could regulate groundwater through the Commerce Clause, but given its past deference to state law, this is unlikely. Instead, states will have to affirmatively address the issue of groundwater marketing with their own laws.

B. *The Public Trust Doctrine*

Though antimarketing commentators cite the public trust doctrine as the definitive law that prohibits groundwater marketing, the doctrine does not apply to groundwater, and therefore has no impact on the issue. The public trust doctrine prevents states from divesting control of lands and resources that benefit the public. The state holds such property in trust for the public

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76. *E.g.*, James M. Klebba, *Water Rights and Water Policy in Louisiana: Laissez Faire Riparianism, Market Based Approaches, or a New Managerialism?*, 53 LA. L. REV. 1779, 1841–43 (1993); Wilson Barmeyer, Note, *The Problem of Reallocation in a Regulated Riparian System: Examining the Law in Georgia*, 40 GA. L. REV. 207, 234–35 (2005).

77. Given Congress's reluctance in the past to regulate groundwater allocation, the fact that groundwater regulation is traditionally a police power of the states, and the political nightmare that would likely result if Congress attempted to nationalize regulation, it is probable that Congress will not interfere with state groundwater markets should they become a reality.

78. *Sporhase*, 458 U.S. at 956.

79. Chris Seldin, Comment, *Interstate Marketing of Indian Water Rights: The Impact of the Commerce Clause*, 87 CAL. L. REV. 1545, 1556 (1999).

80. *Id.* at 1557; *see also* Kenneth A. Hodson, Note, *The Dormant Commerce Clause and the Constitutionality of Intrastate Groundwater Management Programs*, 62 TEX. L. REV. 537, 557 (1983) (noting that the Supreme Court may uphold narrowly tailored groundwater-management schemes designed for conservation).

and may not assign private ownership to the property where it will not benefit the public. The doctrine is confusing and has no set boundaries. As a general matter, though, it could be described as follows:

> When a state holds a resource which is available for the free use of the general public, a court will look with considerable skepticism upon *any* governmental conduct which is calculated *either* to reallocate that resource to more restricted uses *or* to subject public uses to the self-interest of private parties.[81]

This Section demonstrates that the public trust doctrine does not, and should not, extend to groundwater, and therefore has no applicability to the groundwater-market debate. Further, this Section explains that even if the doctrine were extended to groundwater, it would not impact groundwater markets without severe economic consequences that courts would never be willing to take.

The public trust doctrine originally applied to the regulation and use of navigable waters and the underlying lands.[82] The seminal case of *Illinois Central Railroad v. Illinois*[83] cemented the public trust doctrine in prohibiting a state from abdicating authority over an area in which it has a responsibility to exercise its police powers.[84] From this initial scope of navigable waterways, the public trust expanded to encompass recreational and environmental protections over nonnavigable waters.[85] Most states, however, do not currently extend the public trust doctrine to groundwater.[86] As a result, the doctrine, in its current form, does not affect groundwater marketing, and therefore does not interfere with the disposition of the groundwater doctrines toward the issue.

Despite this, opponents of water marketing argue that the public trust includes groundwater and that the doctrine prevents the sale of water. They argue that the doctrine should be expanded to groundwater because courts have expanded the public trust to encompass other areas—namely, recrea-

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81. Joseph L. Sax, *The Public Trust Doctrine in Natural Resource Law: Effective Judicial Intervention*, 68 MICH. L. REV. 471, 490 (1970).

82. *See* SAX ET AL., *supra* note 2, at 590.

83. 146 U.S. 387 (1892).

84. Sax, *supra* note 81, at 489.

85. *See id*; *see also* Erik Swenson, Comment, *Public Trust Doctrine and Groundwater Rights*, 53 U. MIAMI L. REV. 363, 367–68 (1999).

86. *See, e.g.*, Mich. Citizens for Water Conservation v. Nestlé Waters N. Am. Inc., 709 N.W.2d 174, 218 (Mich. Ct. App. 2005), *modified*, 737 N.W.2d 447 (Mich. 2007); R.D. Merrill Co. v. Pollution Control Hearings Bd., 969 P.2d 458, 467 (Wash. 1999) (en banc); Memorandum from Professor Noah D. Hall, Wayne State Univ. Law Sch. and Executive Dir. of the Great Lakes Envtl. Law Ctr., to Senator Patricia L. Birkholz of the Michigan Legislature (Mar. 11, 2008) (on file with author); *see also* Allan Kanner, *The Public Trust Doctrine,* Parens Patriae, *and the Attorney General as the Guardian of the State's Natural Resources*, 16 DUKE ENVTL. L. & POL'Y F. 57, 83 (2005) ("Courts . . . have been reluctant to expand the [public trust] doctrine to encompass actions affecting groundwater.").

tional and environmental uses of water.[87] This analysis raises several problems, however. The uses protected by the doctrine are fundamentally different from the uses of groundwater. Navigation, recreation, and environmental protection are all uses that do not consume water, while any use of groundwater, by contrast, is a consumptive use. Once used, the rest of the public cannot enjoy that same resource. Unless the argument is such that groundwater should be protected from all use, the "logical" expansion of the doctrine to groundwater does not follow. Furthermore, groundwater use cannot meet a common requirement of public trust property—that such property not be sold[88]—as the very concept of groundwater withdrawals requires some sort of monetary exchange. Additionally, the current understanding of the public trust doctrine rests on weak historical justification[89]—calling into question the precedential arguments that courts use to justify the public trust. Persistent references to historical Roman and English applications of the doctrine are incorrect and inapplicable to the current interpretations of the doctrine, thus weakening the foundation of public trust law in America.[90] Thus, an expansion of the public trust is a difficult concept to square with the lack of historical foundation. Finally, such an expansion of the doctrine would emphasize the lack of definitional limits on the doctrine, and thus threaten all forms of private property.[91] It would be all but impossible to apply the public trust doctrine to groundwater, yet limit the doctrine so it would not affect other forms of property.[92]

Courts would not affect groundwater markets even if they extended the public trust doctrine to groundwater. Such an extension could happen one of two ways: maintaining the original justification behind the doctrine (applicable only to some groundwater), or creating a new justification (applicable to all groundwater). By maintaining the original justification of the public trust, courts could extend the doctrine only to groundwater that affects navigable waterways. This would make some sense, as courts have already

87. *See, e.g.*, Kanner, *supra* note 86, at 78–81; Swenson, *supra* note 85, at 367–68; Tuholske, *supra* note 69, at 217–18.

88. Sax, *supra* note 81, at 477.

89. *See* James L. Huffman, *Speaking of Inconvenient Truths—A History of the Public Trust Doctrine*, 18 DUKE ENVTL. L. & POL'Y F. 1 (2007).

90. *See id.*

91. *See id.* at 96.

92. The public trust doctrine's justification—protecting navigable waterways—would have to change if the doctrine were extended to protect groundwater. A new justification for groundwater could easily lead to other forms of property falling under the public trust doctrine based on the same justification. For example, if groundwater fell under the protection of the public trust doctrine because it was a necessary component for human life, the same logic could apply to coal, oil, and gas reserves—as electricity and power also could be deemed necessary for human life. Alternatively, if the logic for protecting groundwater was to preserve the environment, the same logic could apply to lands necessary to save endangered species or even to preserve the atmosphere. Granted, environmental protections are statutorily prescribed; the difference here is that the public trust would enable any citizen to sue for a violation at common law, and takings claims for deprivation of property would not be recognized by courts.

extended the public trust to include nonnavigable surface-water tributaries of navigable waterways because of their effect on the navigable waterways.[93]

This same logic used by the courts could be applied to groundwater. Yet should this happen, the public trust would not simply prevent withdrawals of groundwater. Instead, courts would consider the doctrine as a balancing factor when examining the beneficial uses of withdrawals.[94] Therefore, this kind of expansion would not prohibit groundwater marketing outright. Furthermore, this expansion would have limited effect, as it would only apply to groundwater connected to surface water. Many sources of groundwater, however, do not contribute to surface-water levels (the marketing plan proposed by T. Boone Pickens, discussed *infra*, plans to use one such source of groundwater). Were courts to adopt such an expansion, there would be no effect on groundwater in its entirety, and there would only be limited effect on groundwater markets using groundwater connected to surface water.

By using a justification divorced from the original scope of the public trust, maintaining navigable waterways, courts could apply the doctrine to all groundwater. Such a justification would need to be a separate public right to groundwater involving consumption. The doctrine would have to restrict uses for groundwater and allow any citizen to bring suit to enforce protection of the resource. Yet if selling groundwater were inappropriate under the doctrine, other manufacturers using large quantities of water for private gain would also be suspect. In order to affect groundwater marketing, a court would have to distinguish between that use, and other commercial uses for groundwater (i.e., bottled water, soda bottling plants, industrial uses[95])—a nearly impossible task. Without this difference, the economic impact of extending the doctrine to all commercial groundwater uses would be extreme, and courts would be hesitant to take such an action. Additionally, such an extension would be an excessive change in state law that could easily be seen as best left to the legislature. As a result of the economic consequences and limitations on authority, a court is unlikely to extend the public trust doctrine to the extent that groundwater marketing would be affected, even if the doctrine were extended to all groundwater.

The current interpretation of the public trust doctrine has no bearing on the legality of groundwater markets in any given state. Based on the logic the courts have used to extend the doctrine, it is unlikely to be extended to groundwater without redefining what the doctrine protects (an unlikely proposition). Were the doctrine to apply to groundwater based on its effect on surface water, the legality of groundwater marketing would be unaffected. Were the doctrine applied to all groundwater, the legality would

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93. *See, e.g.*, Nat'l Audubon Soc'y v. Superior Court of Alpine County, 658 P.2d 709, 721 (Cal. 1983) (en banc).

94. *See id.* at 728–29.

95. Many different types of industries use large quantities of freshwater, even in cases where the finished product contains no water at all. The U.S. Geologic Survey states that in the year 2000, industrial water use accounted for 3,570 million gallons of groundwater per day, not including public-supply deliveries to industrial users. HUTSON ET AL., *supra* note 17.

remain unaffected because of the unwillingness of courts to wreak economic havoc on groundwater users.[96] As a result, states will be unable to rely on the public trust doctrine as a source of law that will decide the issue of groundwater marketing for them.

CONCLUSION

Residents in the area of the Texas Panhandle worry about their future livelihood if Mesa Water depletes the Ogallala Aquifer by selling its groundwater to faraway cities.[97] Mesa Water, in turn, rationalizes its efforts by explaining that the aquifer contains "surplus" water that remains unused by the residents of the sparsely populated overlying land, and that the water is "stranded" without an infrastructure to transfer it to where it can be used.[98] These arguments over groundwater marketing roughly characterize what state legislatures should examine when determining groundwater policy and formulating new laws governing groundwater allocation. Yet to a large extent, this debate has yet to influence the laws governing groundwater in the United States. As this Note makes clear, the common law doctrines in the nation are outdated and not suited to deal with the marketing of groundwater. Currently, markets live or die based on the permissibility of off-tract use—an arbitrary distinction that means almost nothing in the reality of today's developed world. Federal law provides no guidance on groundwater marketing, preferring to leave the decision to the states, and the public trust doctrine cannot be used to prevent groundwater marketing, as it does not apply. Whether or not groundwater marketing is good or bad policy, the real impact of the Pickens Plan alone emphasizes that it is a decision with severe enough consequences that it deserves to be debated openly by state governments, who should affirmatively decide whether they want to encourage or discourage groundwater marketing. It should not be left to the laws of the past that have no basis to decide an issue with such significant consequences.

96. While inapplicable to groundwater withdrawals, the public trust doctrine may be suited to protecting groundwater from pollution, as pollution can deprive the use of groundwater to all users. Pollution of groundwater is a general harm that could be fixed by the public trust doctrine, as some commentators already argue. *See* Kanner, *supra* note 86.

97. Berfield, *supra* note 2.

98. Description of the Ogallala Aquifer, http://www.mesawater.com/ogallala.asp (last visited Oct. 1, 2009).